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MEMBER AGENCY OF THE  
METROPOLITAN WATER  
DISTRICT  
OF SOUTHERN CALIFORNIA

September 8th, 1999

Mr. Todd Thompson  
Associate Water Resources Control Engineer  
Division of Water Quality  
State Water Resources Control Board  
P.O. Box 944213  
Sacramento, California 94244-2130

Subject: **Comments Regarding DEIR; Covering General Waste Discharge Requirements for Biosolids Land Application**

Dear Mr. Thompson:

Unfortunately we could not attend the public workshops regarding this document. However, we have several very important topics we would like to comment on regarding the State Water Resources Control Board's DEIR Covering General Waste Discharge Requirements for Biosolids Land Application.

In the mid-1970's Las Virgenes Municipal Water District together with the Triunfo Sanitation District teamed up with the EPA and SWRCB to construct a rather unique land application program for handling solids disposal within the Santa Monica Mountains Zone. Recognizing the ecological importance and sensitivity of this location, a program was developed to handle the treatment, storage and beneficial reuse of the biosolids generated within the same area of origin. In 1979, the Los Angeles RWQCB granted WDR Order No. 79-107 (attached) for a sub-surface biosolids injection project. This Order included stringent storm diversion and runoff control measures that achieved conformance goals of the Los Angeles Basin Water Quality Control Plan. A full-scale operation of a 91-acre facility (the Rancho Las Virgenes Farm) began in 1982. This project included most of the monitoring and tracking elements required by this DEIR. Our history of operating this project has provided us with a thorough understanding of land application and beneficial reuse of biosolids. This DEIR has several components that would have very significant impacts on our ability to operate this successful project.

The General Order (GO) lists the entire Santa Monica Mountains Zone as an exclusion area (page ES-12). The reasoning for this exclusion is to avoid the "potential impacts on protected fishes located in these

areas....southern steelhead in Malibu Creek" (page 8-2). Our Rancho Las Virgenes Farm is located in the central section of this "Zone." Our RWQCB discharge permits require us to monitor a wide spectrum of analytes in the surface waters and groundwater long Malibu Creek. Many years of monitoring results show no impact to the concentration of nutrients, pathogens or metals due to our sub-surface injection activities. A general exclusion of our successful operation is not appropriate.

Initially the injection rate into these fields was restricted by a 30 dry tons per acre maximum, however this has been dramatically reduced to conform with crop uptake limits defined by the 503 regulations. Furthermore, the biosolids injected into our Farm are mainly of a domestic sewage origin. Metals concentrations are very low, and have always been well below the 503 Exceptional Quality or Ceiling Concentrations. Likewise our soil concentrations for these metals are also very low. Even after 17 years of injection, the soil is still less than one tenth the concentration allowed by the DEIR.

Our current operating practice makes our farm site a sustainable area for land application for many years. Our history of operation and monitoring demonstrates that the soil is a reservoir and should have a maximum allowable concentration level, but should also have a potential removal consideration through crop uptake. This is particularly true for dedicated field areas that are used with an integrated approach to utilize crops and land application together as a beneficial means of biosolids handling. When considering the long-term needs for biosolids handling, the concepts of application, removal or uptake, and remaining residual must be handled in concert.

However Chapter 2 (page 2-14) of the DEIR is written to include not only a ceiling concentration for metals but also a cumulative lifetime metals loading limit. This loading limit is based on the background soil levels and the concentration applied over time. There is no consideration for what is removed by crops. We believe this is the wrong approach.

EPA and State grant funds were provided under the Clean Water Act to cover almost 90% of the cost of purchasing the land for the Farm and the cost of construction of the storage and injection facilities. The exclusions and cumulative loading rates of this DEIR would eliminate the option of sub-surface injection at our Rancho Las Virgenes Farm. Thus, it would create very significant economic burden by way of stranded investment, and the need to look for more costly alternative disposal options.

The 503 regulations, and the growth of the communities in Las Virgenes Municipal Water District and Triunfo Sanitation District caused us to look for additional means of handling biosolids. In 1993 we began making compost using anaerobic digestion and a fully-contained, in-vessel composting system. This Composting Facility sited behind the Farm. The Farm property serves two purposes; first it serves as a buffer zone between the Composting Facility, and the heavily traveled road and encroaching residential areas. But more importantly it provides us an operational alternative for handling biosolids. Again, elimination of the Farm would introduce a variety of additional negative impacts.

13-2  
(cont)

13-3

13-4

13-5

13-6

13-1

13-2

We endorse the monitoring requirements stated in the GO as an appropriate means of environmental protection, and can meet them with existing operations and monitoring practices. We also support the continued use of Class B biosolids for the land application process.

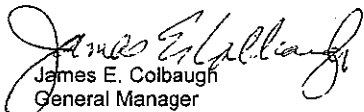
13-7

In conclusion, we feel the statewide approach to handling the control of land application works for vast areas that are far away from the site of generation, but it is not applicable in all circumstances. It serves as a general guideline, however specific requirements for each unique situation can ensure long-term use, and protection of ecologically sensitive areas. The DEIR needs to specify that agencies currently using land application on dedicated areas are excluded from the proposed new provisions.

13-8

Please feel free to call me if you have questions.

Very truly yours,

  
James E. Colbaugh  
General Manager

JEC:jg

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—  
LOS ANGELES REGION

SOUTH BROADWAY, SUITE 4027  
LOS ANGELES, CALIFORNIA 90012  
(213) 620-4460

Exhibit J

cc Tim J.  
orio  
EDMUND G. BROWN JR., C

JUN 27 1979

Las Virgenes Municipal Water District  
4232 Las Virgenes Road  
Calabasas, California 91302

Attn: Mr. H. W. Stokes, General Manager - Chief Engineer

Re: Waste Discharge Requirements - Sludge Application  
at Rancho Las Virgenes (File 78-26)

Gentlemen:

Reference is made to our letter dated May 8, 1979, which transmitted a draft of tentative requirements for sludge application at Rancho Las Virgenes.

Pursuant to Section 13263 of the California Water Code, this California Regional Water Quality Control Board, at a public meeting held on June 25, 1979, reviewed these tentative requirements, considered all factors in the case, and adopted Order No. 79-107 (copy attached) relative to this discharge.

Also attached is a copy of specifications for technical reports to be submitted by you.

Please reference all technical and monitoring reports to our Compliance File No. 6430.

We are enclosing a copy of the Department of Health Services comments for your consideration.

Very truly yours,

*Raymond M. Hertel*  
RAYMOND M. HERTEL  
Executive Officer

cc: See attached mailing list

Enclosures

Full scale Rancho Las Vir  
non-NPDES permit  
order 79-107

Las Virgenes Municipal  
Water District

-2-

JUN 27 1979

cc: State Water Resources Control Board  
Legal Division, Attn: H. M. Schueller  
State Water Resources Control Board  
Division of Water Quality, Attn: Farouk Ismail  
Department of Fish and Game, Region 5  
Department of Health Services, Sanitary Engineering Section  
Attn: Bill MacPherson  
Department of Health, Waste Management Section  
Attn: Earl Margitan  
Department of Water Resources  
Department of Health (Sacramento)  
Attn: Mike Kiado  
Los Angeles County Department of Health Services  
Attn: Ed Schulenburg  
Los Angeles County Flood Control District  
Los Angeles County Engineer - Facilities, Sanitation Division  
Ventura Regional County Sanitation District  
Attn: John Lambie  
Boyle Engineers  
Black & Veatch  
Monte Nido Valley Property Owners Association  
Attn: Joan Kay  
South Coast Air Quality Management District  
Environmental Protection Agency, Region IX  
Santa Monica Mountains Comprehensive Planning Commission  
Los Angeles County Regional Planning Commission  
Las Virgenes Enterprise

State of California  
Resources Agency  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, LOS ANGELES REGION

ORDER NO. 7-9-107

WASTE DISCHARGE REQUIREMENTS

FOR

LAS VIRGENES MUNICIPAL WATER DISTRICT

(Rancho Las Virgenes)

(File 78-26)

The California Regional Water Quality Control Board, Los Angeles Region, finds:

1. Las Virgenes Municipal Water District (LVMWD) operates the Tapia Water Reclamation Facility at 731 Malibu Canyon Road, Calabasas, California.
2. On August 28, 1978, this Regional Water Quality Control Board adopted Order No. 78-98 prescribing waste discharge requirements for LVMWD to operate a sludge farm test model as a portion of their proposed full-scale sludge farming project at a site located near the intersection of Mulholland Highway and Las Virgenes Canyon Road, Calabasas. The overall purpose of the study model was to inject sludge in controlled and monitored small test plots to obtain site-specific data, to train the District's personnel, and to provide a site management tool for establishing field operating procedures to be used in the full-scale system. The test model has been in operation for about six months.
3. In a letter dated April 20, 1979, LVMWD has requested this Regional Board to adopt waste discharge requirements for the proposed full-scale operation. Information and site-specific data resulting from operation of the test model were also submitted as required. The 120-acre farm site will be known as Rancho Las Virgenes.
4. Aerobically digested sewage sludge will be pumped from Tapia Plant to Rancho Las Virgenes via a 6-inch, cement-lined ductile iron force main. The pipe will run parallel to the existing reclaimed water line crossing Malibu Creek at one point. The force main will terminate at two 700,000-gallon steel sludge storage tanks at Rancho Las Virgenes. The two tanks combined will provide 27 days of storage capacity at the beginning of the design period and 18 days at the end of the design period.

In addition, 4 days of emergency sludge storage capacity at design flows will be available at the Tapia Plant.

Order

File 78-26

5. The storage tanks at Rancho Las Virgenes will be covered and equipped with forced ventilation and air scrubbing equipment to eliminate any odors that could be generated from long-term sludge storage. Contents of the storage tanks will be continuously circulated by pumping to prevent buildup of a scum layer. Storage tank overflows and drains will be piped directly into a sewer in Las Virgenes Road so that sludge can be returned to the Tapia Plant for reprocessing should any emergency arise. To provide 100 percent standby capacity for the sludge piping system from Tapia to Rancho Las Virgenes as well as for the sludge injection process, sludge dewatering facilities will be constructed at Tapia. During the wet season, or under any emergency conditions or equipment malfunctions, the sludge can be dewatered at Tapia and hauled to a legal disposal site as necessary.
6. Rancho Las Virgenes will have approximately 87 net acres available for sludge injection. The Rancho will be divided into 16 plots for sludge injection. Sludge will be injected about six inches below the ground surface, using a tractor and specially designed plow. After sludge has been applied to a plot, the soil will be tilled and crops will be planted. After the crops are harvested, the injection process will be repeated.
7. During the first year of operation the resulting sludge loading rate will be approximately 18 tons of dry solids per acre per year. During that design year of operation when the Tapia influent flow reaches 8 mgd, the resulting loading rate will be approximately 27 tons of dry solids per acre per year.
8. Groundwater monitoring and extraction wells will be constructed upstream and downstream of the injection area.
9. The entire site will be fenced to restrict public access.
10. A forage or cereal grain crop will be planted on each plot. The selection of a specific crop for each plot will be based on suitability for the area and adaptability to the sludge farming operation.
11. Reclaimed water from the Tapia Plant will be used to spray irrigate the crops. Water will be applied to meet the crops' requirements and will be measured as will the seasonal rainfalls.

Order

File 78-26

12. Las Virgenes Municipal Water District discharges reclaimed wastewater on land under Order No. 74-381, adopted by this Board on November 18, 1974.
  13. The sludge application site is located in Section 7, T1S, R17W, S.B.B.&M., within the Malibu Creek Hydrologic Subarea. Groundwaters in this subarea are beneficially used for limited agricultural water supply. There are no known water wells in the proximity of this site.
  14. Surface drainage from the site would flow to Las Virgenes Creek which is tributary to Malibu Creek. Beneficial uses of Malibu Creek are: water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, fish migration, and fish spawning. Surface runoff will be diverted around the sludge application areas.
  15. The Board adopted a Water Quality Control Plan for Los Angeles River Basin (48 Basin Plan) on March 10, 1975. The Plan contains water quality objectives for the groundwater in Malibu Creek Hydrologic Subarea and Malibu Creek. The requirements contained in this Order as they are met will be in conformance with the goals of the Water Quality Control Plan.
  16. An Environmental Impact Report (EIR) has been prepared for the Las Virgenes-Triunfo-Malibu-Topanga Area-wide Facilities Plan in accordance with the California Environmental Quality Act. The EIR states that the disposal of solids to a sludge farm could cause localized odor and could cause a health hazard if runoff were to occur into the Malibu Creek System. The proposed installation of leachate control facilities would be able to intercept any leachate that may occur. Odors would be mitigated by proper storage and subsurface injection of sludge into the soil. The requirements established for this discharge will assure that there are no adverse water quality impacts upon the environment.
- The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.
- The Board in a public meeting heard and considered all comments pertaining to the discharge and to the tentative requirements.

Order

File 78-26

IT IS HEREBY ORDERED, that Las Virgenes Municipal Water District, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. Requirements for Discharge of Sewage Sludge

1. Sewage sludge discharged to land shall be limited to digested sewage sludge generated at the Tapia Plant only.
2. Sewage sludge shall be discharged only at the proposed site and only on land owned or controlled by the discharger.
- ✓ 3. Sludge shall be discharged only by injection below the surface of the soil, as proposed.
4. Erosion of deposited materials by surface flow shall be prevented.
5. No sludge injection area shall be closer than 100 feet to any water well, stream channel, ditch or other watercourse.
6. The discharger shall remove any wastes which are discharged at this site in violation of these requirements.
7. Sludge shall not be applied onto lands within 100 feet of any low-pressure water line from which domestic water is derived.
8. Storm runoff, except rain falling naturally on the site, shall be diverted around the operation, storage, and land application areas.
9. The injected sludge shall not be permitted to escape as surface flow from areas of application or to enter creeks, drainage ditches or watercourses.
10. The injected sludge shall not be permitted to pond, surface, or flow across the land application areas.
11. The application rate of sludge on each plot shall not exceed 30 dry tons per acre per year.
12. Reclaimed water shall be applied in quantities to meet the irrigation need of the crops only.
13. Storm diversion facilities and other safeguards such as groundwater monitoring system shall be constructed prior to sludge injection activities.

## B. General Requirements

1. Neither the handling nor application of sludge shall cause pollution or nuisance.
2. The disposal of sludge shall not result in problems due to breeding of mosquitoes, gnats, midges, or other pests.
3. The disposal of sludge shall not impart tastes, odors, color, foaming, or other objectionable characteristics in receiving waters.
4. Odors of waste origin shall not cause a nuisance.

## C. Provisions

1. Prior to initiation of any full-scale injection operation, the discharger shall submit the 100 percent facility design report, including runoff and leachate control facilities and groundwater monitoring wells to this Board for the Executive Officer's review and approval.
2. A copy of these waste discharge specifications shall be maintained at the discharger's headquarters so as to be available at all times to operating personnel.
3. In the event of any change in name, ownership, or control of these waste disposal facilities, the discharger shall notify this Board of such change and shall notify the succeeding owner or operator of the existence of this Order by letter, copy of which shall be forwarded to the Board.
4. In accordance with Section 13267 of the California Water Code the discharger shall furnish, under penalty of perjury, technical reports on self monitoring work performed according to the detailed specifications contained in any Monitoring and Reporting Programs as directed by the Executive Officer, which specifications are subject to periodic revisions as may be warranted.
5. In accordance with Section 13260 of the California Water Code, the discharger shall file a report of any material change or proposed change in the character or location of the discharge.
6. The discharger shall notify this Board immediately by telephone of any adverse condition resulting from these waste discharges or from operations producing these waste discharges, such notifications to be affirmed in writing.

7. These requirements do not exempt the operator of this waste disposal facility from compliance with any other laws, regulations, or ordinances which may be applicable; they do not legalize this waste disposal facility, and they leave unaffected any further restraint on the disposal of wastes at this site which may be contained in other statutes or required by other agencies.
8. In accordance with Section 13263 of the Water Code, these requirements are subject to periodic review and revision by this Regional Board.
9. All wastes which do not meet each of the foregoing requirements shall be held in impervious containers, and if transferred elsewhere the final discharge shall be at a legal point of disposal, and in accordance with provisions of Division 7.5 of the Water Code. For the purpose of this requirement, a legal point of disposal is defined as one for which waste discharge requirements have been established by a California Regional Water Quality Control Board, and which is in full compliance thence.

I, Raymond M. Hertel, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on June 25, 1979.

*RM Hertel*  
 RAYMOND M. HERTEL, Executive Officer

*Plans + Design  
 Report to RWQCB  
 - Requa -*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION  
MONITORING AND REPORTING PROGRAM NO. **6430**  
FOR  
LAS VIRGENES MUNICIPAL WATER DISTRICT  
(Rancho Las Virgenes)  
(File No. 78-26)

The discharger shall implement this monitoring program at the commencement of discharge. Monitoring reports shall be submitted to this Board monthly by the first day of the second following month, beginning with the month subsequent to the commencement of discharge.

GROUNDWATER MONITORING

The discharger shall establish suitable and accessible water well(s) down-gradient from the site used as a receiving water monitoring station. In addition to the above, at least one control well shall be established upstream from the site. The selected wells are subject to the approval of the Executive Officer as required in Provision No. Cl.

The following shall constitute the groundwater monitoring program:

Parameter	Units	Frequency
Water elevation	feet (above sea level)	monthly
Total dissolved solids	mg/l	quarterly
Chloride	mg/l	quarterly
Sulfate	mg/l	quarterly
pH	pH units	quarterly
Nitrate nitrogen	mg/l	quarterly
Total nitrogen	mg/l	quarterly
Chemical oxygen demand	mg/l	quarterly
Lead	mg/l	quarterly
Cadmium	mg/l	quarterly
Total chromium	mg/l	quarterly
Copper	mg/l	quarterly
Nickel	mg/l	semiannually
Zinc	mg/l	semiannually
Color	---	quarterly

Set number of wells to be monitored as one at head of central canyon as control and two more downstream of North & Central Canyons T-13 wells total.

Quarterly composite sludge samples shall be collected and analyzed for the following parameters:

Parameters	Units
Total solids content	%
Volatile solids content	%
pH	pH unit
Total dissolved solids	mg/l
Ammonia nitrogen	mg/kg
Total nitrogen	mg/kg
Zinc	mg/kg
Cadmium	mg/kg
Copper	mg/kg
Total chromium	mg/kg
Lead	mg/kg
Nickel	mg/kg
PCB	mg/kg (annually)

Crop Analysis

The plant uptake of cadmium and zinc in plant tissues for each crop shall also be determined after crop harvesting.

Soil Analysis

A soil sampling grid shall be established for this site and the sample points shall be located where representative soil samples can be obtained. Composite soil samples shall be collected from active plots and analyzed annually for the following parameters:

Parameter	Units
pH	pH unit
Cation exchange capacity	(me/100g)
Zinc	mg/kg
Cadmium	mg/kg
PCB	mg/kg
Copper	mg/kg
Lead	mg/kg
Nickel	mg/kg
Total chromium	mg/kg
Total nitrogen	mg/kg

Site Observation

Sludge injection areas shall be inspected on weekly basis for observation of sludge runoff or ponding. The results of these observations shall be reported to the Board during the reporting period.

set up an observation form similar to Malibu Creek observa  
to be submitted monthly T-2

Each monitoring report must affirm in writing that:

All analyses were conducted at a laboratory certified for such analyses by the State Department of Health and in accordance with current EPA guideline procedures or as specified in the Monitoring Program.

For any analysis for which no procedure is specified in the EPA guidelines or in this Monitoring Program, the constituent or parameter analyzed and the method or procedure used must be specified in the report.

#### Reporting

Each report shall contain the following information with respect to the reporting period:

1. Volume of sludge disposed of during each day and the total volume disposed of during the reporting period and the percent of solid content in injected sludge. *we need of sludge*
2. Sludge application rate during the reporting period, in dry tons per year.
3. The analytical results of sampling programs, as required.
4. A scaled map showing the areas of the site where the above wastes were applied during the reporting period, including the quantity (gallons per acre per day) applied per each area. *we need 8 1/2 map showing*
5. A certification that all wastes deposited were in compliance with the Board's requirements and that no wastes were deposited outside of the boundaries of the site, as specified in the Board's requirements.
6. Quantities of reclaimed irrigation water applied on the plots during the reporting period, in inches per month. *meters for each plot*
7. Site observation report.

As this monitoring program continues, the results may indicate after two-year period that certain parameters need not to be monitored and they could be dropped. The Staff will then revise this monitoring program as appropriate.

#### GENERAL PROVISIONS FOR SAMPLING AND ANALYSIS

All sampling, sample preservation, and analyses shall be performed in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants", promulgated by the United States Environmental Protection Agency.

All chemical analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services.

The discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to insure accuracy of measurements, or shall insure that both activities will be conducted.

A grab sample is defined as an individual sample collected in fewer than 15 minutes.

#### GENERAL PROVISIONS FOR REPORTING

For every item where the requirements are not met, the discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for correction.

The discharger shall maintain all sampling and analytical results, including strip charts; date, exact place, and time of sampling; date analyses were performed; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board.

In reporting the monitoring data, the discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized to demonstrate compliance with waste discharge requirements.

Each report shall contain the following completed declaration:

"I declare under penalty of perjury that the foregoing is true and correct.

Executed on the \_\_\_\_\_ day of \_\_\_\_\_ at \_\_\_\_\_.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Title)"

Ordered by

*R. M. Hentel*  
Executive Officer

JUN 25 1979

Date



## **Responses to Comments from the Las Virgenes Municipal Water District**

---

- 13-1. The Santa Monica Mountains Zone is a designated exclusion area in the proposed GO. Therefore, the GO would not be applicable to biosolids application projects in that location, but individual waste discharge requirements may be required as deemed necessary by the RWQCB. See Master Response 2 for more information about how the proposed GO would affect existing programs.
- 13-2. The subject operation will not be permitted under the proposed GO. The Santa Monica Mountain Zone is exempt from the proposed GO because it is designated as an area requiring special consideration in the Public Resources Code. However, the subject operation should not be viewed as prohibited solely because it is in an area that is excluded from coverage by the proposed GO. The proposed GO excluded the Santa Monica Mountain Zone and other similar areas because it is believed that the necessary special consideration could not be adequately addressed. Individual waste discharge requirements, however, may be needed for these projects. Also see Response to Comment 8-6.
- 13-3. The commenter writes about the already-operating land application program in the Santa Monica Mountains Zone. SWRCB staff recognizes that a well-managed reuse operation can extend the useful life of an individual site. It is also acknowledged that a long-term soil management plan should consider application rates, uptake by plants, and soil residuals. The proposed GO is a program-level regulation and, as such, deals with application rates and initial soil concentrations. The small amounts of uptake or removal are not considered at this program level.
- 13-4. The commenter criticizes the method for calculating the cumulative loading rate, as it only considers metals that are native to soils or are imported with biosolids. It fails to consider any metals that may be removed from a site by crop harvest.

This is a potentially valid criticism of one aspect of the Part 503 regulations. Because the proposed GO adopts these, the commenter is critical of the cumulative loading limits of the proposed GO. The analysis also does not consider the potentially small fraction removed as surface runoff, or with percolating groundwater, or possible additions with fertilizer salts or manure. Failure to consider these low-level losses makes the soil cumulative loading estimates more conservative with respect to actual metals accumulation following long-term biosolids application. As a practical matter, it is likely that only a relatively small portion of the total metals load applied to a land area is actually removed by the harvested portions of the crop, or with the soil-water system in most agricultural soils; a large proportion of the metals will remain bound to soil particles and will not be very mobile in the soil environment for potential uptake by plants or loss in the hydrologic cycle.

Obtaining valid data for the portion of the metals load removed by the crop (or with water discharge) would be difficult and potentially costly to determine, as the crop would need to be statistically sampled and accurate records on yield obtained and reported. The crop may be more variable in terms of metals composition than the well-mixed biosolids. Additions from fertilizers and losses in surface water runoff and through any groundwater discharge would also have to be tracked and recorded if a comprehensive analysis is to be made.

Cumulative loading calculations that consider all input, residual and export pathways would be much more complex than is proposed in the proposed GO or in the Part 503 regulations, and would approach completion of a sophisticated mass balance analysis. This would make the regulatory system more difficult to standardize and track results, and evaluate, and much less user-friendly.

For the proposed GO to factor in metals removal by crops and other input and output sources, the entire risk assessment completed by the EPA would have to be revised and redone by the State and a new cumulative loading approach would have to be developed. SWRCB staff feels the present approach provides an additional conservative safeguard to the issue of the presence of metals in biosolids amended soils.

- 13-5. See Response to Comment 13-2.
- 13-6. Implementation of the proposed GO would not preclude the Las Virgenes Municipal Water District from applying for an individual permit. See Responses to Comments 8-6 and 13-2, and Master Response 2.
- 13-7. The commenter supports the proposed GO's monitoring requirements and the continued use of Class B biosolids. No response is necessary.
- 13-8. Comment noted. The text of the proposed GO, as found in Finding No. 1 of Appendix A, is amended to read as follows:

This General Order . . . discharges, but may not be appropriate for all sites using biosolids due to particular site specific conditions or locations. Such sites are not precluded from being issued individual waste discharger requirements.